NAVYA KHURANA

Computer Science, Sophomore at UMD

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ABOUT ME

A highly motivated learner, interested in combining computation & AI with other fields to develop unique solutions to complex problems.

Citizenship: United States of America

LANGUAGES & DEVELOPER TOOLS

Javascript, Node.js, Next.js
MongoDB
Java & JUnit
Python
C
OpenAI
Gemini
AVR Assembly
Git
Arduino

RELEVANT COURSES

CMSC351: Algorithms	*ongoing*
CMSC330: Organization of Programming Languages	*ongoing*
STAT400: Applied Probability and Statistics I	*ongoing*
CMSC216: Computer Systems *(C programming, Assembly, etc.)*	*2024*
CMSC250: Discrete Mathematics	*2024*
MATH240: Linear Algebra	*2024*
CMSC132: Data Structures	*2023*
CMSC131: Object-Oriented Programming in Java	*2023*
MATH141: Calculus II	*2023*
PSYC100: Introduction to Psychology	*2024*

Other Courses

Graphic Design, Udemy	*2021*
Arduino, EarlyEngineers.in	*2019*
JavaScript & HTML, KhanAcademy	*2019*

INTERESTS

Reading
Formula 1 Racing
Music

EDUCATION & AWARDS

University of Maryland, College-Park *2023-2027 (Expected)*

- President's Scholarship Awardee
- Dean's List
- GPA: 3.86

The Shri Ram School, Gurgaon, India *Middle & High School: 2014-2023*

- Ranked First in Computer Science
- AP Scholar
- Percentage: 96%

WORK EXPERIENCE

Software Engineer Intern @ Passionfruit, New York *July 2024 - September 2024*

Node.js, Next.js, Python

- SEO Content Ideas Generator: LLM-powered tool. Scraped Google's "People Also Asked" questions + analyzed top blogs structure (word limit, # of links, # of images, etc.) for a topic, used in the prompt.
- Topical Authority Scorer: Assessing SEO relevance for inputted content and a chosen topic. Extracted keywords from content text using YAKE and BERT. Scoring keywords, headings, metatags, & url via text-embeddings + cosine-similiarity and LLM APIs.
- Chatbot for Suggested Actions: Based on performance data of websites (fetching from mongoDB). Used linear regression to analyze metric changes over specified duration for each specific SEO task.
- Content Editor: With real-time keyword scoring & dynamic keyword analysis + autosave, rewrite, and download functionality.

Software Engineer @ Shah Lab, UMD *February 2024 - September 2024*

Python | Working with Professor Sahil Shah, Computer Engineering Department @ UMD

- Project: Creating a neural system that sends & records neural signals sent to brain.
- Designed + developed GUI used to send record neural data via the neural interface. Handling any other firmware requirements as needed.
- Generating .coe files from inputted SPI Commands, as per Intan RHS 2000 Board requirements.
- Analyzed C++ OpenEphys repositories to integrate functions for specific board requirements + select plugins to connect GUI with OpenEphys

PROJECTS

Shell Implementation *2024*

C | Pipes, System I/O, Process Control

- Supports certain commands: &&, pipes, input output redirection, and subshell.
- Pipes and subshells handled using a tree structure (code making the tree from input given).
- Use of child processes to handle specific commands

Finding All Possible Solutions of a Maze *2023*

Java | Weighted Graphs, Graph Searching Algorithms, Djikstra's Algorithm

- Each (x,y) in the maze, represented as an instance of class Juncture, is a vertex of the graph.
- Represented a maze as a weighted graph using ArrayLists, storing instances of static inner class Vertex. Ensuring edges only added if maze positions not separated by walls.
- Finding the solution(s) to the maze via Breath-First and Depth-First Search. Implemented Djikstra's Algorithm to find the most optimal solution. (GUI Provided)

Document Manager *2024*

C | Standard I/O, Dynamic Memory Allocation, Command-Line Arguments, String Manipulation

- Command-line arguments used to understand if inputs are from the user or a file.
- Dynamically allocates space for document
- Functionalities: Adds and removes paragraphs and lines. Highlights, removes, replaces certain phrases. Loads a certain array of strings into a document.

SafeSites *Technica Hackathon, 2023*

Python | Library: Streamlit (Front-End)

- Goal: To ensure users can find safe properties for their stay via AirBnB.
  - Finds data about the crime rating of the locality a user is looking at.
  - Inputs other factors (number of children, pets, etc.) needed to find the optimal AirBnB
  - Finds suitable properties using an AirBnB API, displays them in order of their safety rating.

Sudoku Solver *2023*

Python

- Solves a given sudoku puzzle in a 2D array using recursion and a backtracking algorithm.

Multi-Colored LED Lights Controller *2022*

Arduino

- Created Arduino circuit to capture HEX codes sent by LED lights' remote to change their color.
- Send same HEX codes via IR emitter to lights' sensor.

EXTRA-CURRICULAR INITIATIVES

Association for Women in Computing (AWC), Google Develepors *2023*

Head of Journalism, Aravali Model UN *2022*

- Coached and mentored 30 juniors, provided feedback on their coverage pieces. Rewrote the previous UNCA background guide for further assistance. Designed and edited conference newsletters.

Media & Writing Intern, CovidTales.org *2022*

- Interviewed recovering patients to capture their mental and physical experiences in essays.
- Received appreciation from the Founder of CovidTales.